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CLAIMS

1. A chimeric protein comprising:
 - a) a recycling domain capable of binding the human cell surface receptor and
5 formed by an Exocytosis Domain and an Endocytosis Domain; and
 - b) a protein domain binding an Extracellular Therapeutic Target.
2. The chimeric protein of claim 1 wherein the human cell surface receptor is human
Transferrin receptor and the Endocytosis Domain is the alpha1-alpha2 domain of
10 human HFE protein or human deltaN-Lactoferrin.
3. The chimeric protein of claim 2 wherein the Exocytosis Domain is the alpha3
domain of human HFE protein.
- 15 4. The chimeric protein of claim 3 wherein the amino acid sequence comprises SEQ
ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, or SEQ ID NO: 7.
5. The chimeric protein of claims 1 to 4, wherein the protein domain binds an
Extracellular Therapeutic Target selected from: a cytokine, a chemokine, a
20 hormone, a growth factor, an immunoglobulin, a glycolipid, a glycosaminoglycan,
a nucleic acid, a viral protein, a bacterial protein, or a synthetic organic molecule.
6. The chimeric protein of claims 1 to 5, wherein the protein domain binding the
Extracellular Therapeutic Target is selected from: an extracellular region of a
25 membrane-bound protein, a secreted protein, a viral protein, an antigen binding

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domain of an antibody, or one or more selected domain of such protein sequences.

7. The chimeric protein of claims 1 to 6, further comprising an amino acid sequence
5 belonging to a heterologous protein sequence other than the ones comprised in the proteins containing the Exocytosis Domain, the Endocytosis Domain, and the protein domain binding an Extracellular Therapeutic Target.
8. The chimeric protein of claim 7 further comprising a heterologous signal peptide.
10
9. A chimeric protein of claim 8 having a protein domain binding VEGF as Extracellular Therapeutic Target and the sequence corresponding to any of SEQ ID NO: 11-14.
- 15 10. A chimeric protein of claim 8 having a protein domain binding TNF alpha as Extracellular Therapeutic Target and the sequence corresponding to any of SEQ ID NO: 16-19.
11. A chimeric protein of claim 8 having a protein domain binding IL-18 as
20 Extracellular Therapeutic Target and the sequence corresponding to any of SEQ ID NO: 21-24.
12. The chimeric protein of claims 1 to 11, wherein the Exocytosis Domain, the Endocytosis Domain, and the protein domain binding an Extracellular
25 Therapeutic Target are active mutants of the corresponding natural sequence.

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13. A chimeric protein of claim from 1 to 12, wherein said protein is in the form of an active fraction, precursors, salt, derivative, conjugate, or complex.
- 5 14. DNA molecules comprising the DNA sequences encoding for the chimeric proteins of claims from 1 to 12, including nucleotide sequences substantially the same.
15. Expression vectors comprising the DNA molecules of claim 14, wherein
10 expression of said DNA is under the control of a promoter.
16. Host cells transformed with a vectors of claim 15.
17. The process for the preparation of the chimeric proteins of claims from 1 to 12,
15 comprising culturing the transformed cells of claim 16 and collecting the expressed proteins.
18. Purified preparations of the chimeric proteins of claims from 1 to 12.
- 20 19. A pharmaceutical composition comprising the chimeric protein of claims 1 to 12 or the cells of claim 16 as active ingredient.
20. Use of the chimeric protein of claims 1 to 12 or of the cell s of claim 16 as medicament.

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21. Use of the chimeric protein of claims 1 to 12 or of the cells of claim 16 as active ingredients in pharmaceutical compositions for the treatment or prevention of a disease.
- 5 22. Method for the treatment or prevention of a disease, comprising the administration of an effective amount of a chimeric protein of claims 1 to 12 or of the cells of claim 16.